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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/750,765 12/28/00 SWARTZ

M

EXAMINER

PM82/0606  
MITCHELL R. SWARTZ, SCD, EE, MD  
16 PEMBROKE ROAD  
WESTON MA 02493

REFREND: H

ART UNIT

PAPER NUMBER

3641

DATE MAILED:

06/06/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Exhibit "A"

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/Control Number: 09/750,765

541

variants or clearly admit on the record that this is the case. In either instance, if the  
inventor admits one of the inventions unpatentable over the prior art, the evidence or admission  
leads to a rejection under 35 U.S.C. 103(a) of the other invention.

Any inquiry concerning this communication should be directed to Mr. Behrend at  
telephone number (703) 305-1831.

CW  
2001

HARVEY E. BEHREND  
PRIMARY EXAMINER

Exhibit "A"

unsigned.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE THE APPLICATION OF:

Inventor : Mitchell R. Swartz

Serial no. 09/ 750,765

Filed: 12/28/00

For: **METHOD AND APPARATUS  
TO CONTROL ISOTOPIC FUEL  
LOADED WITHIN A MATERIAL**

This is a continuation of Serial no. 07/ 760,970

Filed: 09/17/1991

PAPER:

Group Art Unit: 3641

Examiner: Mr. H. Behrend

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June 14, 2001

**MOTION TO RECUSE MR. HARVEY BEHREND**

1. This Motion is filed to recuse Mr. Harvey Behrend from participating directly or indirectly in Applicant's patent application. This motion is reasonable both because of his systematic incorrect statements even after he has been corrected, his failure to abide by the record, his egregious repeated attempts to force double-patenting, his most recent attempt to create false matters and issues, and his profound bias and prejudice toward certain inventors, to some of whom the Applicant's invention may have an interest.

With respect to the above-entitled, and other of Applicant's applications, there has been no serious or responsive compliance by Mr. Harvey Behrend either with the record of this Office, the past Decision of the Board, or the past Decision by the Federal Court, or with the Rules and Guidelines under which Mr. Harvey Behrend presumably operates.

2. Mr. Behrend has "taken" all of Applicant's applications in what appears to be retaliation for a Federal lawsuit the applicant lodged against the Commissioner of Patents. This systematic behavior creates an appearance of unfairness by the Office, because in the above-entitled action, and at least three others of Applicant's applications, taken by Mr. Behrend, he has demonstrated a show-no-care for the record, rules, or guidelines. He has at great cost, effort, and time to me -- shown to be wrong about the facts repeatedly.

3. Mr. Behrend, in several of his communications (infra), appears to be coercing the Applicant into double patenting for reasons not presently clear. He does this while ignoring both the record and the invention described by the application and claims in question.

A. In "Systems To Monitor And Accelerate Fusion Reactions In A Material Using Electric And Magnetic Fields" [Serial no. 09/568,728, Filed: 05/11/2000; a division of Serial no. 07/ 371,937, Filed: 06/27/89], Mr. Behrens in his Communication #4, mailed 10/11/01, attempted to force the Applicant to double patent, by his unsupported demand for a new second "first-restriction". Said attempt was neither necessary nor proper in light of the original application because the original application was restricted already. The Primary Examiner Daniel Wasil separated 07/371,937 into three inventions [September 16, 1991]. For the convenience of Mr. Behrend, a copy of this relevant first restriction by Examiner Wasil was sent to Mr. Behrend, but thereafter has apparently ignored it.

B. In "Method And Apparatus To Integrate Reactors Involving Reactions Within A Material" [Serial no. 09/ 573,381, Filed: 05/19/2000, a division of Serial no. 07/ 760,970, Filed: 09/17/1991], Mr. Behrend in his Communication #5, mailed 2/12/01, attempted to force the Applicant to double patent by his unsupported demand for a new second "first-restriction". Said attempt was neither necessary nor proper in light of the original application because the original application was restricted already. The original specification, claims and drawings of Serial no. 07/760,970 have already gone through a restriction by the Primary Examiner Daniel Wasil on June 8, 1992. Mr. Wasil separated 07/760,970 into five inventions. For the convenience of Mr. Behrend, a copy of this relevant first restriction by Examiner Wasil was sent to Mr. Behrend, but thereafter has apparently ignored it.

C. In "Method And Apparatus To Monitor Loading Using Vibration" [Serial no. 09/ 750, 480, Filed: 12/28/00; continuation of Serial no. 07/ 371,937, Filed: 06/27/89], Mr. Behrens in his Communication #5, mailed 2/12/01 has attempted to force the Applicant to double patent. Mr. Behrend's request for a new second "first-restriction" was neither necessary nor proper for several reasons. Attention is directed to the fact that the original specification, claims and drawings of Serial no. 07/371,937 already went through a restriction by the Primary Examiner Daniel Wasil on September 16, 1991. This is relevant because this application is a continuation of Serial no. 07/371,937 which was restricted by Primary Examiner Daniel Wasil, delivered after his careful study of the original specification and claims. Mr. Wasil separated 07/371,937 into three inventions. For the convenience of Mr. Behrend, a copy of this relevant first restriction by Examiner Wasil was sent to Mr. Behrend, but thereafter has apparently ignored it.

D. In "Method And Apparatus To Control Isotopic Fuel Loaded Within A Material" [Serial no. 09/ 750,765, Filed: 12/28/00; a continuation of Serial no. 07/ 760,970, Filed: 09/17/1991], Mr. Behrend in his Communication #2, mailed 5/7/01 has attempted to force the Applicant to double patent. Mr. Behrend's request for a new second "first-restriction" was neither necessary nor proper for several reasons. The original specification, claims and drawings of Serial no. 07/760,970 have already gone through a restriction by the Primary Examiner Daniel Wasil on June 8, 1992. Mr. Wasil separated 07/760,970 into five inventions.

For the convenience of Mr. Behrend, a copy of this relevant first restriction by Examiner Wasil was sent to Mr. Behrend, but thereafter has apparently ignored it.

4. Mr. Behrend's demand for a second "first-restriction" is neither necessary nor proper in light of MPEP §803 because given Examiner Wasil's previous restriction, there cannot be any serious burden for Mr. Behrend to examine this case on the merits. No burden has been shown because there was already a restriction in 1992 by Examiner Wasil after his very careful examination of the record. Mr. Behrend was Obligated by MPEP §803.1 and Examiner Wasil's previous restriction, to avoid any improper conflicting analysis, which is also against the public interest. Mr. Behrend was Obligated NOT to coerce the Applicant into double patenting.

5. Mr. Behrend's demand for a second "first-restriction" is in violation the Office's Guidelines because given Examiner Wasil's previous restriction, Mr. Behrend was Obligated to "provide reasons and/or examples to support (his new) conclusions" but did not. Nor did Mr. Behrend give any reason to dispose of Mr. Wasil's reasoning, or the record which was before the Federal Appellate Court (Federal Circuit 00-1108).

6. Mr. Behrend is Obligated to be consistent with the pleadings in the Office including past unrebutted Declarations [*In re Gazave*, 379 F.2d 973, 978, 154 USPQ 92, 96 (CCPA 1967); *In re Chilowsky*, 229 F.2d 457, 462, 108 USPQ 321, 325 (CCPA 1956); *In re Jolles*, 628 F.2d 1322, 206 USPQ 885 (CCPA 1980)] but has not. Against the public good, Mr. Behrend although Obligated to deal with the application and claims, has attempted to lead away from the invention, consistent with his systematic attempts to coerce the applicant into improper actions involving double-patenting.

7. Mr. Behrend in several of his communications has totally ignored the record and the application in question.

A. In "Systems To Monitor And Accelerate Fusion Reactions In A Material Using Electric And Magnetic Fields" [Serial no. 09/568,728, Filed: 05/11/2000; a division of Serial no. 07/ 371,937, Filed: 06/27/89], Mr. Behrend's in his Communication #4, mailed 10/11/01, ignored the record by claiming a figure was in the patent --when it was not. There were four (4) figures with the application and four (4) figures described therein.

B. In "Method And Apparatus To Control Isotopic Fuel Loaded Within A Material" [Serial no. 09/ 750,765, Filed: 12/28/00; a continuation of Serial no. 07/ 760,970, Filed: 09/17/1991], Mr. Behrend's request for election of "thermal conducting means listed as choices "V" through "Z"" is not proper. The description by the Mr. Behrend is indefinite and illogical. Nowhere was it stated that a thermocouple was used to thermally conduct heat because under ordinary circumstances that amount would be trivial. Mr. Behrend is deliberately confusing the issue and the case, or is confused himself.

8. Although Examiner Wasil did personally sign the documents when the first restrictions were made, by contrast Mr. Behrend does not personally sign the documents in which his improper demands for double patenting. This omission by Mr. Behrend is yet another violation of 803.01.

"Since requirements for restriction under Title 35 U.S.C. 121 are discretionary with the Commissioner, it becomes very important that the practice under this section be carefully administered. Notwithstanding the fact that this section of the statute apparently protects the applicant against the dangers that previously might have resulted from compliance with an improper requirement for restriction, it still remains important from the standpoint of the public interest that no requirements be made which might result in the issuance of two patents for the same invention. Therefore, to guard against this possibility, the primary examiner must personally review and sign all final requirements for restriction."

[803.01, Review by Primary Examiner]

A. In "Method And Apparatus To Monitor Loading Using Vibration" [Serial no. 09/ 750, 480, Filed: 12/28/00; continuation of Serial no. 07/ 371,937, Filed: 06/27/89], Mr. Behrend in his Communication #2, with such restriction did not sign the document.

B. In "Method And Apparatus To Control Isotopic Fuel Loaded Within A Material" [Serial no. 09/ 750,765, Filed: 12/28/00; a continuation of Serial no. 07/ 760,970, Filed: 09/17/1991], Mr. Behrend in his Communication #2, with such restriction did not sign the document.

9. Mr. Behrend has ignored each and every of Applicant's requests for constructive assistance and suggestions in drafting one or more acceptable claims [pursuant to MPEP 707.07(j)] and in making constructive suggestions [pursuant to MPEP 706.03(d)]. All have been ignored.

10. Mr. Behrend is a legend on the Internet and a copy of one posting is included (Exhibits A, B, C). Mr. Behrend is the subject of many articles in the field which imply that Mr. Behrend is not impartial to this field. And since he has not been able to maintain his objectivity, he should not be allowed to participate in further administering his proverbial throttling of patent applications in this field by his continuous and illogical attacks.

11. Despite clear and definitive work in these matters by Mr. Daniel Wasil and others, Mr. Behrend is determined to concoct things, including issues and matters which have been settled by the Federal Appeals Court after great cost and effort. Despite orders from the Court on how to handle this, Mr. Behrend, with his now continuous attempt to ignore both the record and responsibility, has elected more than an appearance of impropriety.

12. Mr. Behrend, by his continuing behavior, shown to be at odds with law and Guidelines, has thus deviated from the Code of Federal Regulations at Title 37, The Patent And Trademark Office Code Of Professional Responsibility by his systematic ignoring of the record:

**10.22 MAINTAINING INTEGRITY AND COMPETENCE OF THE LEGAL PROFESSION.**

**(a) A practitioner is subject to discipline if the practitioner has made a materially false statement in, or if the practitioner has deliberately failed to disclose a material fact requested in connection with, the practitioner's application for registration or membership in the bar of any United States court or any State court or his or her authority to otherwise practice before the Office in trademark and other non-patent cases.**

[Added 50 FR 5175, Feb. 6, 1985, effective Mar. 8, 1985]

13. Mr. Behrend's actions, by systematically ignoring the record, are violations of Canon 9 10.110 which states:

**"10.110 Canon 9. A practitioner should avoid even the appearance of professional impropriety. [Added 50 FR 5181, Feb. 6, 1985, effective Mar. 8, 1985]**

14. If a Commissioner has an iota of commitment to fairness, or honesty, or seriousness, this continued behavior on the part of even one of his employees, this deviation from law and practice, will cease and desist. If it continues after this notice, it will be another egregious, capricious, misconduct after formal notification, and now notification of the new Commissioner.

**10.23 Misconduct.**

**(a) A practitioner shall not engage in disreputable or gross misconduct.**

**(b) A practitioner shall not:**

**(4) Engage in conduct involving dishonesty, fraud, deceit, or misrepresentation.**

**(5) Engage in conduct that is prejudicial to the administration of justice.**

15. The Applicant of the above-entitled application continues to preserve all rights granted by the U.S. Constitution and legislated by the U.S. Congress to continue the prosecution of the above-entitled application.

**RECEIVED**

June 14, 2001

**JUL 03 2001**

**TO 3600 MAILROOM**

  
Inventor: Mitchell R. Swartz  
Post Office Box 81135  
Wellesley Hills, Mass. 02481

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**JUN 27 2001**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE THE APPLICATION OF:

Inventor : Mitchell R. Swartz

Serial no. 09/ 750,765

Filed: 12/28/00

For: **METHOD AND APPARATUS  
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This is a continuation of Serial no. 07/ 760,970

Filed: 09/17/1991

PAPER:

Group Art Unit: 3641

Examiner: Mr. H. Behrend

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June 14, 2001

**DECLARATION OF DR. MITCHELL SWARTZ SUPPORTING PETITION**

I, Mitchell R. Swartz, declare that I am a citizen of the United States of America and the inventor of the invention described in the above-entitled application.

1. With respect to the above-entitled and other of Applicant's applications, there does not appear to have been serious or substantive compliance by Mr. Harvey Behrend either with the record of the Office, with the past Decision of the Board, with the past Decision by the Federal Court, or with the Rules and Guidelines under which Mr. Harvey Behrend presumably operates.
2. Mr. Behrend has "taken" all my applications in what appears to be retaliation for a Federal lawsuit.
3. In the above-entitled action, and in at least three other of my applications, which have been "taken" by Mr. Behrend, he has demonstrated a show-no-care attitude for the record, rules, and guidelines. He has at great cost, effort, and time to me shown repeatedly to be wrong about the facts.

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**JUN 27 2001**

**OFFICE OF PETITIONS**



4. Mr. Behrend, in several of his communications (infra), appears to be coercing me into double patenting for reasons not presently clear. He does this while ignoring both the record and the invention described by the application and claims in question.

A. In Serial no. 09/568,728, Filed: 05/11/2000 [a division of Serial no. 07/ 371,937, Filed: 06/27/89], Mr. Behrend in his Communication #4, mailed 10/11/01, attempted to force me to double patent, by his unsupported demand for a new second "first-restriction". Said attempt was neither necessary nor proper in light of the original application because the original application was restricted already. The Primary Examiner Daniel Wasil separated 07/371,937 into three inventions [September 16, 1991]. For the convenience of Mr. Behrend, a copy of this relevant first restriction by Examiner Wasil was sent to Mr. Behrend but he, thereafter, has apparently ignored it.

B. In Serial no. 09/ 573,381, Filed: 05/19/2000 [a division of Serial no. 07/ 760,970, Filed: 09/17/1991], Mr. Behrend in his Communication #5, mailed 2/12/01, attempted to force me to double patent by his unsupported demand for a new second "first-restriction". Said attempt was neither necessary nor proper in light of the original application because the original application was restricted already. The original specification, claims and drawings of Serial no. 07/760,970 have already gone through a restriction by the Primary Examiner Daniel Wasil on June 8, 1992. Mr. Wasil separated 07/760,970 into five inventions. For the convenience of Mr. Behrend, a copy of this relevant first restriction by Examiner Wasil was sent to Mr. Behrend but he, thereafter, has apparently ignored it.

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Behrend, a copy of this relevant first restriction by Examiner Wasil was sent to Mr. Behrend but he, thereafter, has apparently ignored it.

5. Mr. Behrend appears to have attempted to lead away from the invention, consistent with his systematic attempts to coerce me into improper actions involving double-patenting.
6. Mr. Behrend in several of his communications has totally ignored the record and the application in question.

- A. In Serial no. 09/568,728, Filed: 05/11/2000 [a division of Serial no. 07/ 371,937, Filed: 06/27/89], Mr. Behrend's in his Communication #4, mailed 10/11/01, ignored the record by claiming a figure was in the patent --when it was not. There were four (4) figures with the application and four (4) figures described therein.
- B. In Serial no. 09/ 750,765, Filed: 12/28/00 [a continuation of Serial no. 07/ 760,970, Filed: 09/17/1991], Mr. Behrend's request for election of "thermal conducting means listed as choices "V" through "Z"" is not proper. The description by Mr. Behrend is indefinite and illogical. Nowhere was it stated that a thermocouple was used to thermally conduct heat because under ordinary circumstances that amount would be trivial. Mr. Behrend is deliberately confusing the issue and the case or is confused himself.

7. Although Examiner Wasil personally signed the documents when the first restrictions were made, by contrast Mr. Behrend did not personally sign some of the documents in which his improper demands for double patenting were made.
  - A. In Serial no. 09/ 750, 480, Filed: 12/28/00 [a continuation of Serial no. 07/ 371,937, Filed: 06/27/89], Mr. Behrend in his Communication #2, with such restriction did not sign the document.
  - B. In Serial no. 09/ 750,765, Filed: 12/28/00 [a continuation of Serial no. 07/ 760,970, Filed: 09/17/1991], Mr. Behrend in his Communication #2, with such restriction did not sign the document.
8. By contrast to this continuing record, Mr. Behrend appears to have ignored each and every of Applicant's requests for constructive assistance and suggestions in drafting one or more acceptable claims [pursuant to MPEP 707.07(j)] and in making constructive suggestions [pursuant to MPEP 706.03(d)].

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true.

Signature of Inventor:

June 14, 2001

Mitchell R. Swartz, ScD, EE, MD

16 Pembroke Road

Weston, Massachusetts 02493

**United States Court Of Appeals For The Federal Circuit**

**00 - 1108**

**(Serial No. 07/760,970**

**IN RE MITCHELL R. SWARTZ**

**Appeal from the Board of Patent Appeals and Interferences  
(No. 94-2920)**

**AMICUS BRIEF**

Eugene F. Mallove, Sc.D., *Amicus Curiae*  
New Energy Research Laboratory (NERL)  
Bow Technologies Center, Bow, NH  
(603) 228 4516

March 24, 2000

## (5) ARGUMENT

In reviewing the Board Of Patent Appeals and Interferences decision (App. Bd.) in the Swartz cases(Fed. Cir. 00-1107 and Fed. Cir. 00-1108), the following is made clear and as a friend of the court, the following background information is presented.

1. In the "Background" section, p.8, the Board (the administrative judges' names are not known to have been on the registration lists of any of the numerous scientific conferences or meetings devoted to cold fusion and low energy nuclear reactions, to this writer's knowledge) states that in "much of the record" before it:

*"The experimentation describes in these documents constitutes compelling objective evidence justifying the initial disbelief of those skilled workers in the Pons/Fleischmann promise of clean, cheap, and abundant energy without side effects from 'table top' cold fusion."*

This statement is without merit. First, it does not refer to the Applicant's work. Second, the early and inexorable build-up of confirmatory scientific literature shows evidence of excess heat and nuclear products tritium and helium production. This has been discussed in "Fire from Ice" [Dr. Eugene Mallove, John Wiley & Sons, 1991; consult, for example, the 34 primary references cited] and *Infinite Energy*, 10th Cold Fusion Anniversary Issue, Issue #24 which has discussed in detail the historical and scientific perspectives, excess heat, and nuclear products. These are a small subset of a much larger universe of confirmatory results in this field.

2. The Board cites Harwell, Caltech, and MIT in its attack against the Swartz Application. In particular, "Fire from Ice" and *Infinite Energy*, 10th Anniversary Issue (#24) collect and summarize the published scientific literature that conclusively demonstrate the poor scientific foundations of the cited MIT, Caltech, and Harwell early experiments (the so-called "null" results regarding the existence of

4. The "credibility" of the early DOE ERAB panel cited by the Board is a bogus "argument from authority." In fact, one of the twenty two ERAB cold fusion panel people, Dr. William Happer is on record as stating that "*just by looking at Pons and Fleischmann on television, you could tell they were incompetent boobs.*" (Taubes, *Bad Science*, p.305) This heralds the absence of integrity and credibility, and the presence of bias, of said investigative panel cited by the Board.

5. The statement of the Board is that Huizenga did "*consider or at least was aware of, activities during 1990 and 1991 in preparing his book.*"

However, Huizenga is not a valid or final authority in the field today. His role as a scientist was admitted to be biased from the outset and he has never performed the quality work required for experimentation in this field. Therefore, his statements cannot outweigh the evidence provided by others of greater diligence and perceptivity who continue to work in the field. The USPTO is continuing a struggle against scientific reality that it cannot win.

6. The most notable characteristic of the attack against the Swartz patent application at hand is its stale fixation with misrepresented events of 1989, its citation of erroneous reports, and its continued argument from supposed authority, rather than from evolved science and meticulous experiment. I find the arguments a travesty so much so, that I am of the firm opinion that action at the Executive or Congressional level may be required to break through this faulty process.

Respectfully submitted,

Eugene F. Mallove, Sc.D.



# Infinite Energy™

Cold Fusion and New Energy Technology

## Infinite Energy Magazine

Dr. Eugene F. Mallove, Editor-in-Chief  
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March 24, 2000

Clerk, U.S. Court of Appeals for Federal Circuit  
717 Madison Pl., N.W.  
Washington, DC 20439

Dear Sir:

Enclosed are 12 copies of the Amicus Brief in re: Mitchell R. Swartz (00-1108), 12 copies of Issue 24 of *Infinite Energy* (one of the Amicus Brief Authorities), and 12 copies of Eugene Mallove's Memorandum on Cold Fusion to President Clinton, February 2000 (another Amicus Brief Authority).

Sincerely,



Eugene F. Mallove, Sc.D.  
Editor-in-Chief

Submitted on request from The White House for President Bill Clinton—February, 2000

## The Strange Birth of the Water Fuel Age:

### The Cold Fusion "Miracle" Was No Mistake

by Eugene F. Mallove, Sc.D. (Copyright 2000)

#### SUMMARY for President Clinton

Beginning in 1989, a class of new energy technologies has been developed that has the potential to provide pollution-free energy of a magnitude far greater than fossil fuel, using forms of hydrogen from water as the fuel in novel catalytic conditions. The technologies challenge the understanding of physics which has been used to justify continued investment in fossil fuels, nuclear power plants, and the so-called "hot fusion" energy research programs. The U.S. government has spent at least \$15 billion on hot fusion without achieving the "breakeven" point already achieved by the new energy technologies.

Hydrogen as a fuel in engines and fuel cells has been discussed and demonstrated for several decades. Fuel cells are emerging into the commercial market, using hydrogen-rich chemical compounds. These systems are based on chemical reactions whose energy density (energy per unit of fuel) is very low. There are serious problems in making, storing, and transporting hydrogen. *The new energy technologies use hydrogen in a far different way that extracts thousands to millions of times the ordinary chemical combustion energy of hydrogen. Thus, water is fuel!*

In 1989, after five years of work and investment of \$100,000 of their own money, Professors Stanley Pons and Martin Fleischmann announced the release of nuclear-scale energy from an electrochemical cell using palladium as the cathode metal. In the cell, heavy hydrogen is forced into the palladium until a new class of nuclear reactions occurs, in which energy of great intensity is released without the deadly radiation or radioactive by-products produced by other nuclear energy processes. The Pons-Fleischmann announcement ignited a controversy that is documented in the body and references of this memorandum.

The DOE Energy Research Advisory Board "Cold Fusion Panel" was convened at the direction of President Bush to review the "cold fusion" controversy in its early days. The panel relied heavily on misleading reports from the California Institute of Technology, Harwell (England), and the Massachusetts Institute of Technology. Reports from all three sources were negative, and ERAB recommended against any government investment in "cold fusion." This had far-reaching consequences, which seriously impeded but did not stop advances in the field.

After over a decade of work, hundreds of peer-reviewed scientific papers from laboratories around the world confirm the Pons-Fleischmann discovery. It was just the tip of an iceberg of a whole class of nuclear reactions—and other new hydrogen reactions—which occur in metals that are heavily loaded with heavy or normal hydrogen by any of several means. These are often called Low-Energy Nuclear Reactions (LENR), or Chemically-Assisted Nuclear Reactions (CANR). There is also a process, pioneered by BlackLight Power, Inc., that produces catalytically altered hydrogen atoms. What these processes have in common is the release of intense, nuclear-scale energies without damaging radiation or radioactive by-products. Reactors are small scale, requiring simple apparatus and common materials with hydrogen as the fuel. Transmutations of the metal cathode materials are commonly produced. In some cases, where radioactive materials such as uranium and thorium are used in the cells, these are rapidly transmuted into harmless by-products without production of harmful radiation or explosions. In principle, radioactive waste from nuclear reactors can similarly be deactivated without the political and economic costs of burial.

Collectively, these emerging technologies point to a much brighter future for mankind. They do not require resources controlled by any small group of countries. They are concentrated, portable, and democratic. *Low cost realization and distribution of devices and systems based on these technologies will require the resources of a market economy and the removal of internal opposition from vested interests in the U.S. government and industries, including arbitrary blocking of "cold fusion" patent applications by the U.S. Patent Office. Originators of these technologies may make fortunes, but in the end mankind will be the beneficiary. Mr. President, you need do only one thing now: Publicly state that you are going to investigate this matter and then do it.*

"Anything that is theoretically possible will be achieved in practice, no matter what the technical difficulties, if it is desired greatly enough."

Arthur C. Clarke, *Profiles of the Future*, 1963

**I**t was 1870, just five years after the carnage of the American Civil War. Jules Verne's *The Mysterious Island* challenged readers with an audacious prediction: "I believe that water will one day be employed as a fuel, that hydrogen and oxygen which constitute it, used singly or together, will furnish an inexhaustible source of heat and light, of an intensity of which coal is not capable...I believe then that when the deposits of coal are exhausted, we shall heat and warm ourselves with water. Water will be the coal of the future." Though Verne predicted advanced submarines and flights to the Moon—even the competition between the United States and Russia in a lunar race, he was more prescient than anyone could have imagined, at least not until the last decade of the 20th Century. He turned out to be more than right about the power of water. Water will begin to be the fuel of the future, in all probability this decade.

There is an incontrovertible fact well known to scientists working to control thermonuclear fusion energy for peaceful power production: Within only one cubic kilometer of water, there exists enough heavy hydrogen isotope, deuterium (heavy hydrogen), such that if it is fused to the element helium at multi-million-degree temperatures, enough energy is released to equal the combustion energy of all the world's known oil. This planet has at least one billion cubic kilometers of water; there is no danger of running out of this fuel. Or, look at it this way: In only one gallon of ordinary water, there is enough heavy hydrogen to produce the energy equivalent of 300 gallons of gasoline. For worry warts: The heavy hydrogen comprises only 0.015 percent of all the hydrogen in the ordinary water, ergo there is no danger of a water depletion crisis from fusion energy! Heavy hydrogen or deuterium, by the way, is simply hydrogen that bears an extra neutron in its nucleus. It is non-radioactive and easy to extract from water very cheaply.

If we only had a way to tap this fusion energy safely and cheaply, the world's energy problems would be over; most if not all environmental problems would be well on their way to solution. If we could find a way to release this fusion energy benignly without deadly radiation, and on a small scale, rather than in the stadium-like tokamak thermonuclear fusion reactors—smaller, dysfunctional prototypes of which are being tested at fantastic cost at Princeton, MIT, and elsewhere—a millennial revolution in energy technology would break out. It would mean an age in which the recurring cost of energy production would approach zero, since the heavy hydrogen is virtually free. The scope of that revolution would dwarf today's Internet-World Wide Web upheaval. The age of "free information" would have a partner: the age of virtually free energy! It may surprise you to learn that the energy discovery described above was made in the United States in the early 1980s, announced in 1989, and subsequently confirmed by solid published scientific research—some of that by Federal laboratories.<sup>1-7</sup>

So why have you not heard about it? This new energy revo-

more variants of the cold fusion process have been discovered and even patented since 1989. Some of these employ the ordinary (light) hydrogen in water; others operate at high temperatures in the gas phase—having nothing to do with electrochemistry; still others employ thin, layered metallic films that seem destined to draw from the advanced materials science and manufacturing infrastructure of the semiconductor industry. And, strange but true, there may even be significant implications for the biotechnology industry. It now seems that what Fleischmann and Pons discovered in the early 1980s was but the tip of the iceberg of a much larger class of fantastically important phenomena connected with the catalysis of hydrogen and its isotopes. There will likely be found multiple, interlocking physical mechanisms necessary to encompass it all. The implications transcend energy science, but energy alone would be enough reason to make it one of the highest national priorities: All obstacles must be removed from this science and technology—from obstruction at the U.S. Patent Office to official interference by DOE officials. The subject must be discussed openly by officials.

A small fraction of the compendious scientific findings that support the phenomena of cold fusion energy are referenced at these web sites: <<http://www.infinite-energy.com>> and <<http://world.std.com/~mica/cft.html>>. Anyone who pontificates against this science ought to perform a step-by-step critique of this evidence. The opinion of anyone who argues against the experimental scientific evidence solely on *theoretical grounds* should be immediately dismissed. Science does not move forward only by gauging new discoveries against past theories. This seems to have been forgotten by some of the elite purveyors of nonsense against cold fusion. Not that there are not large numbers of theories in support of cold fusion; there are. The late Julian Schwinger (physics Nobel prize co-winner with Feynman) was a noted cold fusion theorist. He was so outraged by the treatment of cold fusion by the American Physical Society (APS) that he resigned from the organization.

Dr. Michael McKubre at SRI International, prime author of the 1994 Electric Power Research Institute (EPRI) study,<sup>8,9</sup> which concluded that the Fleischmann and Pons discovery had been confirmed by their work, had this to say: "Fortuitous or not, in the first experiment that we ran, some three or four months after the initial announcement, we saw some evidence of excess heat, which has really sustained me ever since. Having seen the effect with my own eyes, the claims from a few that this is impossible, or inconsistent with all known laws of nuclear physics, these suggestions are in fact irrelevant. There is no theoretical objection to cold fusion, it's just unlikely given our experience with hot fusion."

The uninitiated might gauge the "religious belief" against cold fusion in the almost humorous utterance by physics Nobel laureate, theorist Steven Weinberg, who in an aside attacked cold fusion in a recent *New York Review of Books* article,<sup>10</sup> even though he gives no evidence of having considered experimental data: "There do not seem to be any exceptions to this natural order, any miracles....The evidence for all these [biblical] miracles seems to be considerably weaker than the evidence for cold fusion, and I don't believe in cold fusion."

To give another example of egregious misconduct against science by the critics, here are the foolish words of Dr. Robert L. Park, who claims to speak for the American Physical Society. In his book, *Voodoo Science: The Road from Foolishness to Fraud*, Park dismisses cold fusion at its very first mention, referring to it as "the discredited 'cold fusion' claim made several years earlier by Stanley Pons and Martin Fleischmann." He says that a

"dwindling band of believers" continue to gather each year "at some swank international resort" in an attempt to "resuscitate" cold fusion. He asks, "Why does this little band so fervently believe in something the rest of the scientific community rejected as fantasy years earlier?" He speculates later, "Perhaps many scientists found in cold fusion relief from boredom." He complains that no helium nuclear ash results were forthcoming from Fleischmann and Pons by June 1989, ergo, cold fusion is fraud. Since at least 1991, Park has been informed by fellow APS scientists, such as Dr. Scott Chubb of the Naval Research Laboratory (NRL), about helium detection in cathodes and in the gas streams of cold fusion experiments. These independent experiments have been published in the U.S. and Japan in peer-reviewed journals. There is absolutely no doubt that Park knows this, yet *Voodoo* contains no mention of this data, an egregious fraud by Park on journalists, government leaders, and the general public. Mr. President, this is the level of inappropriate discourse that you must see through.

### The Politics of Cold Fusion

Cold fusion energy offers the prospect of energy abundance over times comparable to geological ages, in contrast to the microscopic blip in human history of reliance on fossil fuel. If we expect our descendants to live virtually indefinitely on this planet—until perhaps our Sun, our hot fusion reactor in the sky, "dies" some five billion years hence—we had better plan now to possess a source of inexhaustible power. Cold fusion is one energy resource that is virtually infinite, but how to bring it about sooner rather than later? To understand how to move forward, we need to back up and examine what happened and what has been discovered this past decade.

When as an MIT undergraduate I read George Gamow's book, *Thirty Years that Shook Physics: The Story of Quantum Theory* (1966) it was impossible to imagine that in less than 25 years another revolution, such as has been brought about by cold fusion, would shake physics in ways every bit as dramatic as what happened from 1900 to 1930.

For just over a decade, the Cold Fusion and Low-Energy Nuclear Reactions revolution has been underway, whether or not the mainstream physics/chemistry establishment and the general science media wish to agree. The barrier that separated conventionally understood chemistry and nuclear physics has come crashing down like the infamous Berlin Wall. The barrier does not exist, at least not within special microphysical domains of palladium, nickel, and other metals in contact with hydrogen. Exotic new physics is at work. The myth of the "End of Science" again disproved.

The revolution does not even have a name on which all the revolutionaries can agree. "Cold Fusion" is likely to stick, if for no other reason than that is where it all began. The terms LENR (Low-Energy Nuclear Reactions) and CANR (Chemically Assisted Nuclear Reactions) have been tried. Dr. Randell Mills of BlackLight Power, Inc., has a radically different theoretical approach and an apparently robust commercial activity. Recent reports suggest that Morgan Stanley-Dean Witter is about to take his company public in 2000. (In February 2000 his company belatedly received U.S. Patent 6,024,935 on its process.) This may be the first of many other private ventures in cold fusion/new energy. Another company, Lattice Energy, LLC, has just been formed to further the LENR work of nuclear engineering Professor George Miley at the University of Illinois. Several Fortune 100 companies are becoming involved in all this work, though they are not quite ready to declare them-

tion of numerous scientists and most journalists. (Mr. President, this very unfortunate matter has now been referred to the Inspector General's Office at two Federal agencies.)

A great irony: Each of these negative results were themselves the product of the kind of low quality work of which Fleischmann and Pons were accused. The difference was that the reports said what the hot fusion community wanted to hear. This was the legacy of the 1989 ERAB report, but that legacy must now be reversed—and it will be, however long that takes. One method of ending the charade would be for the President of the United States to issue an executive order to the Secretary of Energy to conduct a thorough, unbiased investigation of the entire cold fusion, low-energy nuclear reactions question and to explore how the DOE came to play such a negative, obstructionist role. *DOE laboratories should be compelled to work under the direction of those who have achieved significant positive results, such that there can be no doubt in anyone's mind about these phenomena.*

Almost two years after they were concocted, Professor Ronald Parker of MIT's Plasma Fusion Center publicly stated that the MIT PFC cold fusion calorimetry data were "worthless" (June 7, 1991). In the same period (August 30, 1991) after his data had been challenged, Parker stated that "MIT scientists stand by their conclusions." Which is it? The full story is given in detail in a "Special Report: MIT and Cold Fusion" in the 10th Anniversary issue of *Infinite Energy*, which The White House has been provided. You will find the names of former Federal officials in this document: CIA Director John Deutch and Air Force Secretary Sheila Widnall.

Fleischmann and Pons have been vindicated—if not by the media and by the establishment, certainly by mountains of high quality published results. The literature on the Fleischmann-Pons effect is now voluminous. These are not fantasies. This is solid work, the kind of pioneering, exhaustive experimentation that could have been done at places such as MIT, Caltech, and Harwell, but wasn't. We must now go beyond this sorry past.

The production of excess heat in the range of hundreds of megajoules per mole of metal has been confirmed, as well as the production of helium, tritium, and other elements. Power densities of kilowatts per cubic centimeter of electrode have been achieved by some researchers. The field of Low-Energy Nuclear Reactions has been established, if not yet widely recognized. Low-energy neutrons or weak gamma radiation are seen in some experiments, but most produce excess heat with no radiation or radioactive by-products. Rapid remediation of radioactive materials has been demonstrated. What a fantastic opportunity for universities such as MIT and private industry to become involved in one of the most exciting scientific and technological revolutions of all time. No massive Federal expenditures are required. This is a process that private industry can run with, as long as it is unhampered by bureaucratic interference.

Certainly the replication and commercial application of the Fleischmann-Pons effect and similar effects has been inhibited by a lack of understanding of the exact nature of the reactions, which are not those known to plasma physicists. There is a severe and widespread materials and theory problem related to materials that produce the effects. Criteria are available to test materials for potential activity, but knowledge of how to produce such material at will is not yet available.

Sad to say, solving the materials problem may be beyond the financial resources of the scattered researchers who have worked to validate the Fleischmann and Pons effect, but it is heartening that private corporations are taking the lead in cor-

recting the problem caused by some in government and the academic establishment. Unfortunately, the negative reports by key hot fusion laboratories to ERAB prevented diversion of government funding from the failed hot fusion program to the promising field of cold fusion. The patent-crushing ERAB report also became a severe deterrent to private investment in the new energy field.

We return to George Gamow's musings of 1966. Gamow thought that the next major physics revolution would be in understanding the very existence of elementary particles. He wrote, "There is hardly any doubt that when such a breakthrough is achieved, it will involve concepts that will be as different from those of today as today's concepts are different from those of classical physics." He was both wrong and right. He could not have suspected that the next physics revolution would begin not with high energy particle physics but with fundamental electrochemistry—and that it would end with the birth of what might be called "modern alchemy." The revolution will be the end of the world that we have known, this time for the better.

### Snatching Victory from Defeat

**R**ecent events: Senator John McCain, running in the New Hampshire primary for the Republican presidential nomination, agreed to be briefed on cold fusion. He kept his word. Within a week of his promise, he sent a top aide to our offices at the Bow Technologies Center. He received briefing materials that were to be handed to the Senator. Thus, Senator McCain became the very first major party presidential candidate in history to receive a high-level briefing about cold fusion. This briefing occurred before he won the February 1 New Hampshire Republican primary by a large margin over Governor Bush of Texas and others.

I later sought to ask Vice President Al Gore, while he was campaigning in Concord, New Hampshire for the Democratic Presidential nomination, whether he too would agree to a cold fusion briefing. On January 13, I attended a Gore question-and-answer meeting at Temple Beth Jacob in Concord, but was unable to ask him the question—the Vice President was very long in responding to so many of the other questions that time simply ran out. This was the same venue in which eight years earlier, almost to the day, I had asked you about cold fusion when you were a candidate, Mr. President! You seemed to know something about it, because you said that some Arkansas scientists had been "stonewalled" on cold fusion by the DOE. In all probability they were.

As has been reported in *Infinite Energy*, it is our understanding that in the early 1990s Vice President Gore shied away from a cold fusion briefing by qualified scientists, after being urged to do so by a colleague at Apple Computer Corporation. The Vice President then reportedly stated that the topic was "too controversial, too complex—give it to the science advisor." With your encouragement, we hope that the Vice President will now be more open to discussions.

For the record, the question that was handed to Mr. Gore's representative on January 13, 2000:

### Question for Al Gore from Dr. Eugene Mallove, Bow, NH

Mr. Vice President:

I'm Dr. Eugene Mallove, a member of this Temple and editor of the scientific journal *Infinite Energy* magazine. I would like to ask you two critical questions about energy and the environment, because I know those topics are dear to you—it may even help you win over Bradley because of the boondoggle going on

No. 00-1191

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IN THE

Supreme Court of the United States

Mitchell R. Swartz, Petitioner

v.

Q. Todd Dickinson, Director of the USPTO,  
Commissioner of Patents and Trademarks,  
Respondent

On Petition For A Writ Of Certiorari  
To United States Court Of Appeals  
For The Federal Circuit  
00-1107 (Serial No. 07/371,937)  
00-1108 (Serial No. 07/760,970)

AMICUS BRIEF  
OF HAL FOX

Evan R. Witt, Counsel of Record  
15 West South Temple, Ste #900      February 21, 2001  
Salt Lake City, Utah 84101  
Phone 801-537-1700

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**(1) CERTIFICATE OF INTEREST [Pursuant Rule 47.4]**

Friend of the Court certifies the following:

1. The full name of every party or amicus represented by me is:

Hal Fox.

2. The name of the real party in interest represented by me is:

Hal Fox.

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

NONE

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

NONE

Note: This brief was prepared by Hal Fox and Mitchell Swartz and not by Evan R. Witt, Counsel of Record.

## **(2) Table Of Contents**

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### **(3) Table of Authorities**

<b>Published Peer-Reviewed Authorities</b>	
M. Swartz and H. Fox, 1998, "Metanalysis of Research and Development in Cold Fusion", <i>Journal of New Energy</i> , 5, 2, 141-142.	2
H. Fox and M. Swartz, 1995, "Progress in Cold Nuclear Fusion - Metanalysis using an Augmented Database", Abstracts of ICCF-5.	2
M. Swartz and H. Fox, 1995, "Metanalysis of the Cold Fusion Literature", Abstracts of ICCF-7.	2

**(4) STATEMENT OF AMICUS CURIAE  
(Fed Circuit Rule 47.5)**

As a friend of the court, the following background information is presented.

Dr. Fox earned a Ph.D. [Computer Science, 1983] and a Master's Degree [MBA, U of Utah, 1972].

He served in the U.S. Air Force [1952-1958] including as a meteorologist, and then worked as a Missile System Engineer for ten years.

His interests are energy, engineering, and public education. He was director of the first research lab at the University of Utah Research Park, and has contributed to scientific research by publishing more than two dozen major scientific periodicals describing the worldwide research and engineering.

He has published over 50 technical articles around the world, and has had 15 patents issued.

**(5) ARGUMENT - ISSUES ADDRESSED**

3. Whether the Office complied with the standards of review regarding definiteness under 35 U.S.C. §112 ¶2.

There is nothing indefinite about "loading" or "vibration". There are a variety of lattice structures (including metals and conducting nonmetals) that can be "loaded" with a variety of elemental constituents in an electrochemical environment.

5. Whether the Office complied with the standards of review regarding utility under 35 U.S.C. §101.

The Board has made a 35 U.S.C. §112, 101 rejection for failure to teach how to use the invention and a section 101 rejection for lack of utility [per M.P.E.P. §708.03(a)]. This writer, as one skilled in the art, was quick to recognize the teachings of Dr. Swartz by which an electrode could be monitored using its frequency to measure loadings. It is my professional judgment that the method of measuring the

degree of hydrogen (or deuterium) loading of palladium (or any other metal) is clever, not obvious, and is an important invention with utility.

The ability to determine the "loading" into an electrode by the means described by Dr. Mitchell Swartz is non-obvious, important, and useful. Furthermore, the subject invention by Dr. Mitchell Swartz has considerable utility, not only for specific type of uses cited by Dr. Swartz, but also for a broader range of applications in both electrochemical operations and in experiments involving the handling of electrodes in some gaseous environments. As one example, for many years, there has been serious concerns about the effects of gases embedded in various materials, especially metals. For example, nearly all of the nuclear power plants that have been closed earlier than their planned life times has been due to hydrogen embrittlement of some of the stainless steel piping. Any invention which could have been used to measure the degree of hydrogen absorption in the stainless steel pipes, or in samples of the stainless steel, would have been of enormous utility. Had such an invention been known in earlier years, it is possible that billions of dollars of lost electrical power generation in nuclear power plants could have been saved.

#### 6. Whether the Office has violated the United States Constitution.

A. For twelve years, this author has been involved full time in publishing information about low-energy nuclear reactions and research which have been studied in, and reported on from, over 200 laboratories in 30 countries. We have reported on research from over 3,000 papers from hundreds of laboratories in 30 countries [H. Fox and M. Swartz, 1995, "Progress in Cold Nuclear Fusion - Metanalysis using an Augmented Database", Abstracts of ICCF-5; M. Swartz and H. Fox, 1995, "Metanalysis of the Cold Fusion Literature", Abstracts of ICCF-7; M. Swartz and H. Fox, 1998, "Metanalysis of Research and Development in Cold Fusion", Journal of New Energy, 3, 2,141-142]. From this research, many invention applications have been filed, especially by Japanese and American scientists.

Over 100 low-energy nuclear reactions patents have issued in Japan and many more in European countries, as we have reported in *Fusion Facts* as each patent issued. In contrast, no patents have been allowed to issue in the U.S.

It is estimated that 300 patent applications have been sent to the U.S. Office of Patents and Trademarks by inventors using these systems, but no patents have issued citing the prior art. It is not credible that hundreds of scientists and inventors are all mistaken in their experiments and data, or that only the patent examiners are sufficiently educated to point out the faults of these inventions.

B. Therefore, the Office of Patents and Trademarks has been denying inventors their constitutional rights to the protection of intellectual property, including the above-entitled application. Inventors in other countries have been successful in obtaining patent protection by the governments.

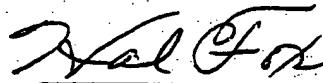
The end result of the above activities has been the following:

Lack of education in the United States.

Lack of intellectual property development in the United States because although many patents issued abroad, no patents were allowed to be issued in the U.S.

Lack of science and engineering development because little research and development is occurring at major U.S. universities, few corporations have invested heavily in low-energy nuclear reactions, and there is still no official DOE support.

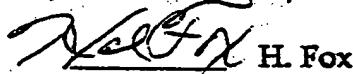
Respectfully submitted,



Hal Fox, PhD, MBA

#### (6) STATEMENT OF CONSENT

The writer of this Brief certifies that he has gained consent of the Petitioner to participate as an *amicus curiae*. Consent from the Office of the Solicitor General (202-514-2217) has been requested/obtained.



H. Fox

**6. Whether the Office has violated the United States Constitution.**

The field called "cold fusion" or CANR (Chemically Assisted Nuclear Reactions) or LENR (Low Energy Nuclear Reactions) has gone from being a phenomenon of uncertain reality to one having the support of hundreds of experimental replications and thousands of published papers describing the work. This work can be easily accessed using the Internet or any scientific data base.

Eight international conferences have been held and papers are now regularly presented at meetings of the American Physical Society, the American Chemical Society and the American Nuclear Society. In addition, local meetings on the subject are regularly held in Russia and in Japan.

It is no longer correct or even rational to argue that this phenomenon is a delusion, a fraud, or a mistake, as the patent office and other government agencies have asserted. It is true, the phenomenon is difficult to initiate, it is not well understood, and many scientists remain skeptical because they are unaware of the vast amount of new information. Nevertheless, the phenomenon is as real as can be said for many new discoveries, discoveries that routinely receive patent protection.

Respectfully submitted,

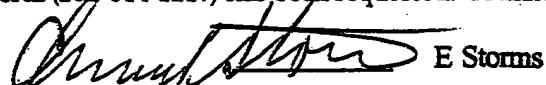


Edmund Storms, Ph.D.

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**(6) STATEMENT OF CONSENT**

The writer of this Brief certifies that he has gained consent of the Petitioner to participate as an *amicus curiae*. Consent from the Office of the Solicitor General (202-514-2217) has been requested/obtained.





DEPARTMENT OF THE AIR FORCE  
ROME LABORATORY (AFMC)  
HANSOM AIR FORCE BASE, MASSACHUSETTS

18 April 1996

CONFIDENTIAL

To whom it may concern,

I would like to express my strong support for the work being conduct by Dr. Mitchell Swartz in the field of isotopic fuel loading of metal lattices. It is my professional as well as personal opinion that this field is real in spite of a lack of repeatability by most practitioners.

My responsibilities at Rome Laboratory include evaluating new material systems with potential importance for military applications. I am a senior scientist in the Electromagnetic Materials Division having completed my PhD in Materials Science from MIT in 1984. From 1985 until 1995 I was the U.S. representative to NATO, Panel III on Electromagnetic Materials where my duties were to establish collaborations among scientists in the seven member countries.

For example, in 1987 I was charged with the duty to survey the field of the new superconductors which were at first a great shock to experts in the field. I was selected for this work in part do to my M.S. thesis in the field of low temperature Physics. It is merely coincidental that my thesis topic was based on loading palladium alloys with hydrogen and deuterium and measuring the superconducting transition temperatures.

My two year survey concluded that the theoretical underpinnings of superconduction were sadly lacking. The BCS theory was not only incapable of predicting the occurrence of the YBCO materials, it was incapable of making a priori predictions for any arrangement of matter. This observation regarding the lack of understanding in low temperature physics is not widely known. This lack of first principles level of understanding has been of little concern to experimentalists and has not discouraged nine years of extensive research support.

Isotopic loading of metal lattices, on the other hand, has a stigma attached to it as a result of DOE sponsored committee reports issued in 1989 and 1990. Those reports were based on a similar, yet inferior knowledge base than which I observed in low temperature condensed matter systems. The early lack of reproducibility combined with the unfortunate early claims of Pons and Fleischman have combined to discredit this entire area of investigation. My Division would have been the natural home for study and support of these materials systems if events had unfolded differently.

I have known Mitchell Swartz since 1991 and believe his investigations are the most thorough and precise yet conducted in isotopic loading. His parametric relationships between loading and thermal output suggest specific strategies for scaling. I believe that the thermal effects he is observing are real and will ultimately be useful on a large scale. Please feel free to contact me for further discussions on these matters at: (617) 377-3776

*Brian S. Ahern*  
Brian S. Ahern

EM Materials Technology Division  
Electromagnetics & Reliability Directorate

**Kurzweil Technologies**

Patents and Technology Assets  
Assessment, Development and Disposition

April 18, 1996

U.S. Patent Office  
Washington, D.C.

Gentlemen:

As a recognized inventor I would like to state my opinion. I was the principal developer of the first omni-font optical character recognition equipment, the first print-to-speech reading machine for the blind (the Kurzweil Reading Machine), the first CCD flat-bed scanner, the first commercially marketed large vocabulary speech recognition technology and other inventions in speech synthesis and recognition, and have served as technical advisor to companies such as Wang and Xerox. I have published extensively in the fields of artificial intelligence and health, and have received nine honorary Doctorates in science, engineering, music and humane letters. I have also received the 1994 Dickson Prize (Carnegie Mellon University's top science prize) and the Grace Murray Hopper Award from the Association for Computing Machinery, and was appointed Honorary Chairman for Innovation for the White House Conference on Small Business by President Reagan. I have been named Inventor of the Year (1988, by MIT and the Boston Museum of Science), and Engineer of the Year (1990, by Design News Magazine).

Energy, which the world obtains principally from the burning of fossil fuels is approximately a two trillion dollar per year industry comprising on the order of ten percent of the world's gross national product. Beyond its economic impact, the extraction, distribution and burning of fossil fuels has greatly and negatively affected the world's environment. Like many scientists around the world, I have examined Fleischman and Pons' reports carefully, and have not been quick to ride on the second and negative wave of cold fusion publicity. It is apparent to anyone who examines the data first hand that an energy producing process appears to have been discovered, and that it deserves further exploration.

I have known Dr. Swartz since 1966 when we met at the Massachusetts Institute of Technology and know him to be a serious engineer and physician. I have had the opportunity to examine some of his data in this field, including a visit to his research setup which involves loading an isotopic fuel into a material. The data from his research appears to be very promising and the potential impact of his work is enormously important. I think it is a mistake for the U.S. Patent Office to dismiss inventions related to "cold fusion" out of hand. This attitude is not consistent with the views of many serious scientists, and apparently some foreign patent offices.

Sincerely,

Raymond Kurzweil  
Chairman and CEO

**EXHIBIT # B**



DEPARTMENT OF THE NAVY  
NAVAL AIR WARFARE CENTER  
WEAPONS DIVISION  
CHINA LAKE, CALIFORNIA 93555-6001

IN REPLY REFER TO:  
12000  
474230D/125  
30 Apr 96

To whom it may concern:

I first met Dr. Mitchell Swartz at the Fourth International Conference on Cold Fusion at Maui, Hawaii in 1993. I was impressed by his analysis of calorimetric results from various laboratories. He has also done excellent work relating to the isotopic loading of deuterium into metal lattices. This field is complex and deserves further research support.

I have investigated anomalous effects in deuterated metals for the past 5 years. My work provides evidence for the anomalous product of excess heat and helium-4. However, these experiments have been very difficult to reproduce in any consistent manner. There are simply too many variables that we do not yet understand. In my opinion, the loading of deuterium into palladium is one of the key variables.

I would like to express my strong support for the work being conducted by Dr. Mitchell Swartz involving anomalous effects in deuterated metals. I hope that he can find the financial support that his research in this field deserves.

Sincerely,

*Melvin H. Miles*

MELVIN H. MILES  
NAWCWPNS Fellow

RESPONSE UNDER 37 CFR 1.116  
EXPEDITED PROCEDURE - EXAMINING GROUP NUMBER 2204

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE THE APPLICATION OF:

Inventor : Mitchell R. Swartz

Serial No.:08-406,457

Filed: 3/20/1995 *→ open date*

For: **APPARATUS TO DETERMINE  
THE ACTIVITY OF A SAMPLE  
LOADED WITH ISOTOPIC FUEL**

PAPER:

Group Art Unit: 2204

Examiner: Daniel Wasil

September 16, 1997

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**DECLARATION OF GAYLE VERNER  
SUPPORTING APPEAL BRIEF**

I, Gayle Verner, declare that I am a citizen of the United States of America.

1. My field of experience is that of a journalist and educator. I am a nationally published reporter who has written extensively in many fields such as science and medicine, including energy conversion. I have earned the degree of Master in Education from the Harvard Graduate School of Education. For the past eighteen (18) years I have been a journalist, primarily for a Time, Inc. publication (*People Magazine*), *American Health Magazine*, the *Cold Fusion Times*, and have researched many articles for other national and regional journals, newspapers, and newsletters. I make the following statements independently and not as a representative of any publication.

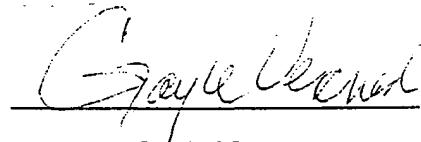
2. I have conversed, and/or interviewed with a number of individual scientists in the field of cold fusion including such major contributors as Dr. Martin Fleischmann, Dr. Melvin Miles, Prof. Peter Hagelstein, Dr. Eugene Mallove, Dr. George Miley, Dennis Cravens, Prof. John Bockris, Hal Fox, Prof. Keith Johnson, Dr. Brian Ahern, Dr. Edmund Storms and Dr. Mitchell Swartz. I have closely followed this field and the breaking news in it since 1990.

3. Contrary to the Office's misguided claim, positive results and reports of cold fusion successes have continued to mount.

4. I have witnessed Dr. Swartz operate his equipment in front of visitors to the laboratory including Professors Louis Smullin and Keith Johnson from MIT and others. Dr. Swartz has presented and published his data and findings to peer-reviewed scientific technical journals.

5. It has been my observation that the U.S. Patent Office has not used due diligence in their review of much of the material sent to them by Dr. Swartz.

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.



Date: September 16, 1997

Gayle Verner

Post Office Address: P.O. Box 81135  
Wellesley Hills, MA 02181

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE THE APPLICATION OF:

Inventor : Mitchell R. Swartz

Serial no. 07/ 371,937  
Filed: 06/27/89

For: SYSTEMS TO MONITOR AND  
ACCELERATE ELECTROCHEMICALLY  
INDUCED NUCLEAR FUSION REACTIONS  
WITHIN A MATERIAL

PAPER:

Group Art Unit:2204

Examiner: D. Wasil

Declaration of Dr. Eugene F. Mallove

Commissioner of Patents and Trademarks  
Washington, D.C. 202312

1. I, Eugene F. Mallove, declare that I am a citizen of the United States of America. I have earned the degree of Doctor of Science in Environmental Health Sciences from Harvard University [1975], as well as two degrees from the Massachusetts Institute of Technology [Master of Science and B.S. in Aeronautical and Astronautical Engineering (1969, 1970)].

2. I have worked as an engineer and scientist for more than fifteen years in the fields of aeronautical engineering, space propulsion, astrodynamics, inertial navigation, celestial mechanics, planetary physics, space communication and physics, coherent optical scattering and hydrogen isotope loading into various metals.

3. I am the Editor-in-Chief of the science and technology magazine "COLD FUSION," the premier edition of which is expected to appear on the newsstands by around April 1994. It is also available by subscription. In little over a month of solicitation, the magazine has acquired many dozens of subscribers from technical and industrial organizations.

4. I have published extensively, including in the field which the above-entitled invention resides. Furthermore I was the Chief Science Writer for the MIT News Office during the announcement of cold fusion in March 1989, and have followed the development of the field very closely since that time. My book in this field ("Fire from Ice: Searching for the Truth Behind the Cold Fusion Furor", John Wiley & Sons May 1991 (nominated for the Pulitzer Prize) has followed my other publications (as author or contributor) including *The Quickening Universe: Cosmic Evolution and Human Destiny*, *The Starflight Handbook: A Pioneer's Guide to Interstellar Travel*, and contributions to the Physics Section of the *Almanac of Science and Technology* (San Diego). Other relevant background includes my programs with the Voice of America [United States Information Agency], and my contributions to MIT's *Technology Review*, *The Washington Post*, *The Planetary Report*, *Air & Space*, and *Sky & Telescope*.

5. I have studied the Examiner's cited reference (Huizenga) and the arguments presented below. I hereby respectfully submit that these statements and opinions of the Office are incorrect.

6. The Examiner states that cold fusion does not exist; that it is "an unproven concept".

*"The invention is considered as being based on the "cold fusion" concept. This concept relies on the incorporation of a hydrogen isotope (deuterium) into a metal host (e.g., palladium) at a relatively low (cold) temperature for nuclear energy generation, such as the type disclosed by appellant. However, as set forth more fully below, this "cold fusion" concept is still no more than just an unproven concept."*

[Appeal Brief of Examiner Wasil, undated, mailed January 13, 1994]

7. The Examiner is incorrect in a reliance upon the text by Dr. John R. Huizenga, entitled *Cold Fusion: Scientific Fiasco of the Century*, [University of Rochester Press, 1992].

*"For example note Huizenga (Cold Fusion : The Scientific Fiasco of the Century, 1992). Huizenga was Co-Chairman of the United States Department of Energy - Energy Research Advisory Board Cold Fusion Panel which investigated "cold fusion" issue. Huizenga concluded that there is a lack of convincing evidence concerning neutron generation/nuclear fusion reactions of the "cold fusion" type."*

[Appeal Brief of Examiner Wasil, undated, mailed January 13, 1994]

8. Attention is directed to the simple fact that Dr. Huizenga ignores essentially all the positive evidence for cold fusion. Dr. Huizenga leaves out virtually everything after 1989. Dr. Huizenga says nothing about the confirming, yet ultra-cautious, cold fusion work carried out at the conservative Electric Power Research Institute. The evidence cited by the Examiner shows that Dr. Huizenga denies that a major cold fusion effort is under way in Japan.

9. On the other hand, Dr. Huizenga neglects to mention the cold fusion controversy about the MIT PFC "negative" cold fusion experiment and the continuing contention regarding the California Institute of Technology "negative" cold fusion experiment. There exist considerable evidence that these studies have major problems, and may have in fact shown excess heat.

10. The continuing news of successful and provocative cold fusion research in Japan, \$12 million funding for cold fusion from the private Electric Power Research Institute (EPRI) in the U.S., and recently initiated multi-million dollar funding by the Japanese Ministry of International Trade and Industry (MITI) stands in complete contrast to what is reported in Huizenga. His two favored villains, Pons and Fleischmann, are hard at work at a laboratory in France funded by the Japanese Technova Corporation, and report having achieved reproducible boiling in cold fusion cells, which has vaporized all the heavy water electrolyte -- over and over again. Their latest calorimetry work has been independently reviewed by physicist Dr. Wilford N. Hansen, who finds it completely sound.

11. Spectacular results have regularly been reported in Japan in the cold fusion field -- from reproducible, million-neutron bursts in solid state fusion at the Nippon Telephone and Telegraph Laboratory (NTT -- the "Bell Laboratory" of Japan) to the work of hot fusion physicist Professor Akito Takahashi at Osaka University, who has been detecting cold fusion neutrons for the past three years; he recently has confirmed the continuous, correlated emission of neutrons and scores of watts of excess energy from a single cell for a sustained period of about three months.

12. Dr. Huizenga doesn't report any of the cold fusion evidence. He says that every bit of it can be characterized in two words -- "pathological science." He says that all these hundreds of scientists in over a dozen countries still working or interested in cold fusion are deluded with "pathological science".

Excess heat in cold fusion experiments is illusory, says Huizenga.

Tritium generation found by over 40 cold fusion groups is a vast mistake, says Huizenga. However, the facts appear to contradict Dr. Huizenga, and many are listed in my book on pages 246-248.

13. Huizenga's opinion of cold fusion at the very outset of the controversy is documented in **Cold Fusion: Scientific Fiasco of the Century**. In describing his appointment to head the ERAB panel, Huizenga explicitly declared his bias:

*"My initial feeling was that the whole cold fusion episode would be short-lived and that it would be wise to delay appointing such a panel."*  
(Huizenga, **Cold Fusion: Scientific Fiasco of the Century**, p.42)

14. Many other things are mysteriously missing from **Cold Fusion: Scientific Fiasco of the Century**. Although the group is mentioned by name, we read nothing of the pioneering work of Dr. Michael McKubre and his EPRI-funded group at SRI in Menlo Park, California. This team is widely acknowledged to have done some of the most careful cold fusion calorimetry in the world. It is unconscionable Dr. for Huizenga not to discuss Dr. McKubre's and so much other positive work.

15. Dr. Huizenga devotes only one paragraph to the 2nd Annual Conference on Cold Fusion in Como, Italy, held in July, 1991. He says nothing about the new findings that were presented there, which were numerous and impressive. In fact, world-class electrochemist Dr. Heinz Gerischer of the Max Planck Institute

attended the conference as a skeptic; he left convinced that nuclear reactions at some level were, indeed, occurring in metal lattices. Later Dr. Gerischer wrote in a memo to the German government:

**"The fact that in the Republic of Germany this work has been inhibited is no longer justified. It could, later on, be regarded as a very unfortunate gap in German research when compared with the present activity in other countries and particularly in Japan."**

16. Another incorrect statement appears in Huizenga on page 171:

*"The lack of papers [at the first annual conference, 1990] from Japan was inconsistent with propaganda from Utah and from stories written by selected reporters claiming spectacular advances in cold fusion by the Japanese." And, "...cold fusion after one year was essentially a United States phenomenon, except for pockets of activity in India and Italy."*

**[Huizenga, Cold Fusion: Scientific Fiasco of the Century]**

This is completely untrue and Huizenga could easily have learned this before his book came out. Many major Japanese universities, and quite a few Japanese industrial firms, have on-going research in cold fusion that is accelerating.

17. Huizenga is thus very selective in his presentation of the facts. The Final Report of the Utah National Cold Fusion Institute (1991) was available to him and contains clear descriptions of reproducible tritium generation in experiments by the ultra-cautious electrochemist Dr. Fritz Will (who was less convinced about the nuclear explanation for excess heat).

18. In addition, although Huizenga states:

*"There has been no sign of this growth of understanding of cold fusion either in the production of fusion products or excess heat."*

**(Huizenga, Cold Fusion: Scientific Fiasco of the Century)**

However, it is well known and reported in the open literature that McKubre's groups, and others, have achieved near reproducible excess power in cold fusion cells. Many the groups have recently stated that achieving high levels of deuterium-to-palladium atom loading (D/Pd ratio) were key to provoking the phenomena. Therefore any system to monitor the loading would have utility.

20. The ICCF-4 conference presented even more papers confirming both the existence and utility of this field. Excess heat was found by over two-dozen research groups. Startling nuclear effects were found by many others: low level neutron emissions, tritium, helium-4, charged particles, and even isotope changes and element transmutations that could be seen by gamma ray spectroscopy, among other convincing tests.

21. "COLD FUSION", of which I am the editor, joins several journals and newsletters already in this field which continuously publish new papers showing positive results. These include **FUSION FACTS** and **COLD FUSION TIMES** which supplement **Fusion Technology**, and even now **Physics Letters A** and the **Journal of Electroanalytical Chemistry**. The number of these publications is increasing, which demonstrates both the existence of and growth of this field.

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date:

Feb 4, 1994

Eugene F. Mallove

Dr. Eugene F. Mallove  
Editor, "COLD FUSION"  
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RESPONSE UNDER 37 CFR 1.116  
EXPEDITED PROCEDURE - EXAMINING GROUP NUMBER 2204  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE THE APPLICATION OF:

Inventor : Mitchell R. Swartz

Serial No.: 07/ 339,976

Filed: 04/18/1989

SYSTEMS TO INCREASE THE EFFICIENCY,  
CONTROL, SAFETY AND ENERGY  
UTILIZATION OF ELECTROCHEMICALLY

PAPER:

Group Art Unit: 2204

Examiner Anthony Chi

April 17, 1996

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**DECLARATION of ROBERT W. BASS, M.A. Oxon, Ph.D.**

I, the undersigned Robert W. Bass, declare that I am a citizen of the United States of America.

1. I am an Inventor of U.S. Patents 4,235,668 (issued Nov. 25, 1980), 4,236,964 (issued December 2, 1980) and 4,448,743 (issued May 15, 1984). I have also served as a Registered Patent Agent [29,130] with 18 years of experience in the practice of patent law before the PTO. This includes one year (1993) as a full-time Associate with the Intellectual Property Law firm of Poms, Smith, Lande & Rose in Century City, California, and a seventeen year practice as an avocation or part-time profession.

2. I am aware of this field both because I have continued to read the literature, because of my "hot" fusion inventions, because of my more recent QRT Cold Fusion invention [subject of a pending application filed in 1991], and because I have actually both personally drafted and submitted several cold fusion applications for, and also read numerous cold fusion applications by, other inventors who have submitted to the Patent Office. My "hot" fusion inventions include the Topolotron and the Plasmisphere which were issued patents.

3. I, myself, as well as several collaborators in my fusion plasma confinement research and in my nuclear fusion reaction-rate equilibrium-stability optimization research have published many papers. These were published in both the *Proceedings of the Utah Academy of Arts & Sciences* and in the leading archival "hot" fusion journals, such as the APS "Physics of Fluids", the IEEE "Transactions on Plasmas Science," and the American Nuclear Association "Fusion Technology". My inventions have been written up at length in the leading treatises on this subject, including Tom Dolan's 3-volume book "Fusion Research" and Reece Roth's book "Fusion Energy".

4. Academically, I have served on the Theoretical Division of Project Matterhorn at the Princeton Plasma Physics Lab ("hot" fusion) in 1957-59, and more recently have been a Professor of Physics & Astronomy at BYU (1971-81) and a Prof. of Aerospace Engineering Sciences at the U of Colorado, and of EE at UCLA (visiting Faculty member, 1986-87), and of Systems Engineering at the West Coast University.

5. Ever since the first patent applications on so-called "cold" fusion (or lattice-catalyzed low-energy nuclear fusion) I have noticed what has the appearance of an appalling pattern of deliberate conduct on the part of the Examiners in Art Group 220 and their supervisor, Mr. Garret. Before I had even met Dr. Swartz, and before I had even filed a "cold" fusion patent, I had complained verbally to Mr. Garret about the numerous inconsistencies in his Examiners pertaining to their treatment of "cold" fusion patent applications. Mr. Garret replied to me with what in retrospect appears to have been some brazen misstatements. Here are just two examples.

6. First, Mr. Garrett said that perhaps the PTO library did not subscribe to various technical journals cited by the "cold" fusion applicants, although a subsequent phone call to the PTO verified that every single one of the journals in question was in fact either subscribed to by, or maintained by, or located in, the PTO library.

7. Second, Mr. Garret vigorously - and with seeming plausibility - absolutely denied that there was any special "policy" pertaining to the handling of "cold" fusion patents. Mr. Garret claimed that each and every Examiner under him was acting on his own independent judgment without regard to any categorization. This erroneous claim appears to be contradicted by the Annual Report which was issued by Commissioner Lehman after his first year in office. Said Annual Report referred explicitly to "cold" fusion as an "emerging technology" and stated

No. 00-1191

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IN THE  
**Supreme Court of the United States**

Mitchell R. Swartz, *Petitioner*

v.

Q. Todd Dickinson, Director of the USPTO,  
Commissioner of Patents and Trademarks,  
*Respondent*

On Petition For A Writ Of Certiorari  
To United States Court Of Appeals  
For The Federal Circuit  
00-1107 (Serial No. 07/371,937)  
00-1108 (Serial No. 07/760,970)

**AMICUS BRIEF  
OF TALBOT A. CHUBB**

February 21, 2001

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**(1) CERTIFICATE OF INTEREST [Pursuant Rule 47.4]**

Friend of the Petitioner and the Court certifies the following:

1. The full name of every party or amicus represented by me is:

Talbot A. Chubb.

2. The name of the real party in interest represented by me is:

Talbot A. Chubb.

3. All parent corporations and any publicly hold companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

NONE

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

NONE

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that there were some 400 applications in that category still pending and that none had yet been acted upon.

8. It now appears that this inaction is in contrast to the European Economic Community which will issue the Fleischmann-Pons patents, based upon the recent public statements by the European patent authorities. Japan is reported to have issued more than 100 Cold Fusion patents.

9. I have read the Notice from the Examiner Chi to Dr. Swartz dated March 29, 1996. In my opinion, the Examiner is in error in paragraph 1, claims must not be "patentably distinct", but "materially distinct" as Dr. Swartz has attempted to explain within the papers associated with above-entitled application.

10. With respect to these series of applications, there does not seem to be a genuine attempt to follow the directives of the Appeal Board to provide Dr. Swartz with a substantive response to the Briefs and Declarations already submitted.

11. There is a pattern of behavior here. I have read many complaints on the Internet by disgruntled "cold" fusion patent applicants, most of whom complain of the same things. These individuals appear to have independently arrived at the same and probably only possible conclusion -- that there is an organized effort under Art Group 220 to delay, obstruct, obfuscate, harass, hinder, and otherwise retard the issuance of patents in this category.

12. These efforts to delay and obstruct include examples of intellectual dishonesty in patent papers which I have examined in this field, and which attempted only to go through this Art Group.

13. In contrast to what I believe may be an abnormal pattern, I have seen cold fusion patents in the same field issue, but these were examined by OTHER Art Groups. Unlike this Art Group, those applications which were prosecuted before other art groups were issued.

14. Further consistent with this abnormal pattern, the PTO has issued, and continues to regularly issue, patents which purport to disclose how to nullify gravity or to attain an "anti-gravity" device. In fact, at last count, there were scores of such patents issued, all apparently with no difficulty. These devices do not work, while "cold fusion" does, as one can regularly read about its success in many research articles.

15. There is a lot wrong with this. Here are two problems. First, it is now well-known to, and generally believed by, the scores of inventors in the Cold Fusion field that the ONLY way to

get fair treatment from the PTO is to word the patent application in such a way that the application does NOT get sent to Art Group 220.

16. Second, in this field, some applicants of inventions submitted to the Office avoid mentioning Drs. Fleischmann & Pons and even the words "cold" fusion. In my opinion, this is wrong, and is both inconsistent with, and a dereliction of duty from, the PTO's Canons of Professional Responsibility. The Office should never encourage, even implicitly, any lapse of the applicants' obligation of complete "candor". Any such application in this field should provide a full and complete citation of Drs. Fleischmann & Pon's work as prior related art.

17. In my opinion, the Appeals Board should ask Commissioner Lehman, as well as the Inspector Generals of both the General Accounting Office and of the PTO to initiate a serious, rigorous investigation into the conduct of Art Group 220. One should not forget that Admiral Short was Court Martialed for Dereliction of Duty for being asleep on his watch during Pearl Harbor.

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted.

Robert W. Bass

Signature of Declarant:

Dr. Robert W. Bass

Registered Patent Agent 29,130

P.O. Box 4000-442, Pahrump, NV 89041

phone/FAX: (702) 751-0932/0739

Voice-Mail: (702) 387-7213

April 17, 1996

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE THE APPLICATION OF:

Inventor : Mitchell R. Swartz

Serial No.: 07/ 339,976

Filed: 04/18/1989

PAPER:

Group Art Unit: 2204

Examiner Anthony Chi

SYSTEMS TO INCREASE THE EFFICIENCY  
CONTROL, SAFETY AND ENERGY  
UTILIZATION OF ELECTROCHEMICALLY  
INDUCED FUSION REACTIONS

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**DECLARATION OF DANA R. ROTEGARD**

1. I, Dana Richard Rotegard, declare that I am a citizen of the United States of America. I have earned the degree of B.A. in Political Science and Music [Macalester, St. Paul], and continued graduate study in the fields of microeconomics, policy of the environment, and finance at the Humphrey Institute of the University of Minnesota. I have worked as a resource economist and have acted as the Chief Research Economist for the City of Minneapolis during ten year service there.

2. I am a writer in the fields of economic development, space science and cold fusion. My contributions include publications in, or editorial function for, **Space Power, Futurics, Space Markets** of Jane's Information Group, **Case for Mars III, Cold Fusion Times, and Fusion Facts.** I am a member and founder of the **Minnesota Cold Fusion Alliance.**

3. The Patent Office is reported to have the opinion that cold fusion does not exist, and that inventions in this area have no utility.

4. I submit that this statement and opinion of the Office is incorrect. Most of the negative authority cited by the Examiner has not approached cold fusion with a scientifically open mind. Furthermore, a number of the leading academic laboratories in the USA have replicated the original Fleischmann and Pons effect.

including the Texas A & M chemistry department, The University of Minnesota Materials Science and Chemical Engineering Department, Stanford Research International and others as documented by the bibliography supplied by the Fusion Information Center Inc. of Salt Lake City, Utah.

5. If only a few labs had reported success, then skepticism of cold fusion would be viable. Several research teams reported positive finding on the original Fleischmann Pons effect at the Fourth International Conference on Cold Fusion in December 1993. I submit that Occams razor would dictate that the phenomena is real and has been "reproduced" to the point of overkill.

6. Major research institutions, industrial corporations and established scientific journals of international repute have endorsed the reality of cold fusion and are acting to explore and benefit from this reality. The Electric Power Research Institute of Palo Alto, California, and the Japanese MITI have endorsed and are actively sponsoring cold fusion research. Toyota through its research arm IMRA is sponsoring cold fusion research in France and Japan. In short, major institutions that should have an interest in new energy science have decided that cold fusion is real and are acting on that judgement. In addition, major refereed journals such as Fusion Technology and Physics Letters A have published numerous positive cold fusion lab reports. These trends would lead a prudent person to conclude that there is substance to the research cited above. Therefore, developments and inventions in this area have great utility.

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date:

Dana Richard Rotegard

Postal Address:

223 Ridgewood

Minneapolis, Minnesota 55403

Fusion Technology and Physics Letters A have published numerous positive cold fusion lab reports. These trends would lead a prudent person to conclude that there is substance to the research cited above. Therefore, developments and inventions in this area have great utility.

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dana Richard Rotegard

Date: 5-15-94

Dana Richard Rotegard

Postal Address:

223 Ridgewood

Minneapolis, Minnesota 55403

RESPONSE UNDER 37 CFR 1.116  
EXPEDITED PROCEDURE - EXAMINING GROUP NUMBER 2204

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE THE APPLICATION OF:

Inventor : Mitchell R. Swartz  
Serial No.: 07/ 339,976  
Filed: 04/18/1989

SYSTEMS TO INCREASE THE EFFICIENCY,  
CONTROL, SAFETY AND ENERGY  
UTILIZATION OF ELECTROCHEMICALLY  
INDUCED FUSION REACTIONS

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

PAPER:

Group Art Unit: 2204  
Examiner Anthony Chi

May 16, 1995

**DECLARATION OF HAL FOX  
SUPPORTING PETITION TO THE COMMISSIONER**

I, Hal Fox, declare that I am a citizen of the United States of America.

1. I have earned the degree of Bachelor of Science in physics and mathematics from the University of Utah in 1951, an M.B.A. from University of Utah in 1972, and continued post-graduate studies with numerous science and engineering courses.

2. My fields of experience include computation for scientists, fluid dynamics, missile systems, energy systems, and systems engineering. I am also familiar with the energy producing and energy conversion devices, including those in the field of cold nuclear fusion. I have worked with missile, energy and other engineering systems for more than thirty (30) years.

3. I served in the U.S. Air Force from 1951 to 1959. I have worked in industry including Hughes Aircraft company as a missile systems engineer, and have directed research at the Fluidonics Research Laboratory (University of Utah Research Park) in fluid dynamics, and most recently with F.E.A.T., Inc. (now ENECO).

4. I am a nationally recognized expert and considered an authority on developments in the field of cold fusion -- from science and business points of view because I have worked in the cold fusion field with scientists, business people, engineers and others. I began F.E.A.T. (Future Energy Applied Technology) which eventually merged and became ENECO. I was cochairperson of the International

symposium on Cold Fusion and Advanced Energy Sources in Minsk, Belarus (May 1994), and have chaired sessions and/or presented papers at other international cold fusion symposia (including ICCF-4, ICCF-5, and other international conferences).

5. I have published extensively in the energy field. I have presented papers at several international symposia (including ICCF-4 and ICCF-5). I began publishing Fusion Facts (ISSN #1051-8738) in July 1989, and have been its editor for more than five years. I have edited and published New Energy News (ISSN #1075-0045) for two years. I have studied this field closely and published analysis as well as a compendium of all publications [H. Fox, M. Swartz, "PROGRESS IN COLD NUCLEAR FUSION - METANALYSIS USING AN AUGMENTED DATABASE, presented at ICCF-5, (1995); and H. Fox, Compendium Of The World Wide Cold Nuclear Fusion Literature distributed with "**COLD FUSION IMPACT in the ENHANCED ENERGY AGE**", Fusion Information Center, Utah, (1992). The book is now translated in four languages; publication pending in Spain and Germany.

6. I am familiar with many patent applications submitted to the United States Patent Office. I would estimate that I am acquainted with many inventors in the field of cold fusion who have applied for cold fusion patents or patents in the cold fusion field, including more than ten who have discussed their inventions with me.

7. It has been my observation that the U.S. Patent Office examiners have not used their access to professional literature on cold fusion such as Fusion Technology, Journal of Electroanalytical Chemistry and Nuovo Cimento; publications which were or should have been available to them in the Patent Office library. Instead they have relied on articles in the Washington Post, New York Times, and other newspapers. The fact that many patent agents have been unable to obtain patents on cold fusion and yet have been able to patent other types of inventions in the normal procedure is strong evidence that the patent examiners and/or their supervisors are not acting in good faith when the subject is cold fusion.

8. It has been my observation that when inventors have been reasonably diligent and have acted in good faith in response to usual disregard of inventor's normal rights, the examiners in the U.S. Patent Office have unreasonably rejected all responses and have made it extraordinarily difficult for any of the estimated 100 or more patent applications for many varieties of inventions regarding cold

nuclear fusion to be handled in a normal manner. Few other countries have denied cold fusion inventors the rights to the fruits of their ingenuity. The most telling evidence is the fact that scores of patents on cold fusion have issued in other countries (over one-third of all patents issued have been to Japanese inventors and assignees). By contrast almost no patents on cold nuclear fusion have been granted by the U.S. Patent Office. This observation is the strongest evidence that the examiners and their supervisors in the U.S. Patent Office are responsible for the flagrant denial of inventors rights granted under the Constitution of the United States.

9. The apparent lack of normal progress in the handling of cold fusion patent applications and the international issuance of cold fusion patents has been the subject of several articles and comments written by me and others and then published in the monthly newsletter Fusion Facts during the time from July 1989 to May 1995 (the most recent article).

10. The apparent lack of the use of normal procedures in the handling of cold fusion patents has placed an enormous financial burden on the inventors and have collectively denied the inventors of the United States and their assignees <sup>NTT</sup> the opportunities to enjoy economic advantages from their intellectual property rights. One end result has been the lost opportunities for United States citizens to be among the world's economic leaders in this new energy technology – despite most of the initial work beginning in the United States. The collective national economic losses might amount to billions of dollars in potential future sales revenues to U.S. businesses and enormous losses to U.S. inventors, investors, and citizens.

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: May 16, 1995



Hal Fox

Post Office Address: Fusion Information Center  
P.O. Box 58639  
Salt Lake City, UT 84158  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE THE APPLICATION OF:

Inventor : Mitchell R. Swartz

Serial no. 07/ 760,970 *Denied*

Filed: 09/17/91

For:

SYSTEMS TO CONTROL NUCLEAR FUSION

OF ISOTOPIC FUEL

WITHIN A MATERIAL

PAPER:

Group Art Unit: 2204

Examiner: D. Wasil

April 22, 1994

U.S. Patent and Trademark Office  
Washington, D.C. 20231

**DECLARATION OF ISIDOR STRAUS**

1. I, Isidor Straus, am a citizen of the United States of America. I have earned the degree of Bachelor of Science in Electrical Engineering from the Massachusetts Institute of Technology in 1968, am an inventor [U.S. Patents 4,370,570, 4,719,699, and 4,760,355], and a Registered Professional Engineer in the Commonwealth of Massachusetts [Reg. #31468].

I am familiar with the interactions of magnetic and electric fields, and electric charges and currents with materials. My fields of experience include circuit design, three-dimensional display technology, and electromagnetic compatibility including materials and testing. In the area of electromagnetic compatibility, I have been active since 1976, and I am a nationally recognized expert.

**DECLARATION OF ISIDOR STRAUS**

- Page 2

2. I have reviewed the invention described by Rabinowitz (Patent WO 90/14670 tk) and the invention described by Dr. Mitchell R. Swartz in present application, S/N 07/760,970.

3. Based upon my review, it is my judgement that Rabinowitz describes a means to generate electricity from a current scavenging system. This is confirmed in Rabinowitz.

4. Rabinowitz uses the weak electrical current from charged particles emitted from a material during recoil. After the charged particle exits the material, it will be spatially circulated by means of the magnetic field. Rabinowitz uses the Lorentz forces to move the charged particles around in a circle. That Lorentz force is centripetal, that is, perpendicular to the path of the charged particles at all times. I believe that only those species of ions which are "tuned" (as a function of mass and charge and magnetic field intensity) will continue to circulate, the rest impacting on the sides of the Rabinowitz device. For example, the Rabinowitz device might be set to collect protons, in which case more massive ions would impact the sides of the circulating ring. The favored species of ions circulates, inducing current in the pickup coils.

5. The usefulness of the Rabinowitz invention lies in its utilizing the already moving charged particles with a magnetic field which is essentially homogeneous in intensity at the location where the charged particles are ejected from the material by way of recoil (at number 70 in Figure 5b of Rabinowitz).

6. In contrast, the Swartz invention (as shown in Figure 18 of the original specification of the above-entitled invention) is a method of collecting a species in a

## DECLARATION OF ISIDOR STRAUS

- Page 3

small volume within the Swartz device using an inhomogeneous magnetic field. In contrast to Rabinowitz, Swartz describes (in Figure 18 and the text which goes with it) a chemical collection system based upon differences in susceptibility of the materials. In contrast to Rabinowitz, the Swartz invention can produce a sustained increase in the concentration of a desired isotope in the small volume located within the Swartz apparatus (one side of number 1 in Figure 18 of the original specification of the above-entitled invention) when there are differences in magnetic permeability of the isotopes.

7. In contrast to Rabinowitz's linear use of the Lorentz force, this portion of the present invention is a non-linear device in the sense that the containment field distribution is spatially non-uniform.

8. In summary, the Swartz invention is therefore a chemical collection device. In contrast Rabinowitz describes a current scavenging system. In contrast to Rabinowitz's linear use of the Lorentz force, this portion of the present invention is a non-linear device. These inventions differ in their results, the means to achieve those results, and their intent.

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: April 22, 1994



Isidor Straus  
Wayland, Mass.

No. 00-1191

---

IN THE  
Supreme Court of the United States

Mitchell R. Swartz, *Petitioner*

v.

Q. Todd Dickinson, Director of the USPTO,  
Commissioner of Patents and Trademarks,  
*Respondent*

On Petition For A Writ Of Certiorari  
To United States Court Of Appeals  
For The Federal Circuit  
00-1107 (Serial No. 07/371,937)  
00-1108 (Serial No. 07/760,970)

**AMICUS BRIEF  
OF EDMUND STORMS**

February 21, 2001

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**(1) CERTIFICATE OF INTEREST [Pursuant Rule 47.4]**

Friend of the Court certifies the following:

1. The full name of every party or amicus represented by me is:

Edmund Storms.

2. The name of the real party in interest represented by me is:

Edmund Storms.

3. All parent corporations and any publicly hold companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

NONE

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

NONE

## **(2) Table Of Contents**

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### (3) Table of Authorities

Published Peer-Reviewed Authorities	
"Electrolytic tritium production", E. K. Storms and C. Talcott, <i>Fusion Technol</i> 17 (1990) 680.	1
"The effect of hydriding on the physical structure of palladium and on the release of contained tritium", E. K. Storms and C. Talcott-Storms, <i>Fusion Technol</i> 20 (1991) 246.	1
"Review of experimental observations about the cold fusion effect", E. K. Storms, <i>Fusion Technol</i> 20 (1991) 433.	1
"Measurements of excess heat from a Pons-Fleischmann Type electrolytic cell using palladium sheet", E. K. Storms, <i>Fusion Technol</i> 23 (1993) 230.	1
Hearing before the Subcommittee on Energy of the Committee on Science, Space, and Technology U.S. House of Representatives, May 5, 1993, #38, p. 114.	1
"Warming Up to Cold Fusion", E. K. Storms, <i>MIT Technology Review</i> , May/June 1994, page 19	1
"Formation of b-PdD Containing High Deuterium Concentration Using Electrolysis of Heavy-Water", E. K. Storms, <i>J. Alloys and Compounds</i> 268 (1998) 89.	1

**(4) STATEMENT OF AMICUS CURIAE**  
**(Fed Circuit Rule 47.5)**

As a friend of the court, the following background information is presented.

Dr. Storms holds a Master of Science Degree (M.S., Washington University, St. Louis) and a Doctorate of Philosophy (Washington University) in 1958.

He has served for 34 years at the Los Alamos National Laboratory. His experience includes basic research in a variety of material properties as applied to nuclear power production. This work was used in the nuclear rocket program (ROVER) and the space nuclear power program (SP-100).

After retiring in 1991, he has continued to study the field of anomalous low energy nuclear reactions, including the field conventionally called "cold fusion".

Dr. Storms has published more than twenty four scientific reviews and peer-reviewed experimental reports on his work on the subject. They include publications in the journal of the American Nuclear Society [*Fusion Technology*] and in the Report of the Hearing before the Subcommittee on Energy of the Committee on Science, Space, and Technology U.S. House of Representatives, May 5, 1993, #38, p. 114.

## **(5) ARGUMENT - ISSUES ADDRESSED**

### **5. Whether the Office complied with the standards of review regarding utility under 35 U.S.C. §101.**

The petitioner has submitted an application for a patent describing a method to determine the hydrogen concentration in palladium and in other metals. This has definite utility.

Most metals react with hydrogen and their properties, and are changed by this process. For example, when palladium reacts with hydrogen, the transition to a superconducting state moves to a higher temperature the more hydrogen is reacted. Thirty years ago, this behavior was considered very important because palladium hydride (PdH) had the highest transition temperature known at the time. Since then, the compounds formed between palladium and hydrogen have been extensively studied.

All of these efforts rely on knowing the amount of hydrogen combined with the metal. Various methods have been used to determine the hydrogen content, each with its own limitations and potential errors. The method proposed by Dr. Swartz adds one more method that might prove useful under the correct circumstances. I have no personal or financial relationship to the petitioner, Dr. Mitchell Swartz. I have reviewed his work and am writing this to serve the truth. It is my personal belief, based on a careful study of the issues, that the patent in question is worthy of being granted.

**(3) Table of Authorities**

Published Peer-Reviewed Authorities	
"Excess Heat & Why Cold Fusion Research Has Prevailed", Charles Beaudette, Oak Press, LLC, South Bristol, Maine, USA, (2000).	1
M. H. Miles and B. F. Bush, "Heat and Helium Measurements in Deuterated Palladium", <i>Trans. Fusion Technol.</i> , 26, p. 156 (1994).	2
M. C. H. McKubre, F. Tanzella, and P. Tripodi, Presentation made at the <i>Western Regional Meeting of the American Chemical Society</i> , October 1999. <i>Proc. ICCF8</i> (in press). Submitted to <i>Fusion Technology</i> .	2
Y. Arata and Y.-C. Zhang, "Achievement of Solid-State Plasma Fusion ('Cold-Fusion')", <i>Proc. Japan Acad.</i> , 71B, p. 304 (1995).	2
Y. Arata and Y.-C. Zhang, "A New Energy caused by 'Spillover-Deuterium'", <i>Proc. Japan Acad.</i> 70B, p. 106 (1994).	2
Y. Arata and Y.-C. Zhang, "Solid State Plasma Fusion ('Cold Fusion')", <i>J. High Temperature Soc. Jpn.</i> 23 (Special Vol.), p. 1 (1998).	2
Y. Arata and Y.-C. Zhang, "Helium (4He, 3He) within Deuterated Pd-Black", <i>Proc. Japan Acad.</i> 73B, p. 1 (1997).	2
M. C. H. McKubre, F. Tanzella, and P. Tripodi, Presentation made at the <i>8th International Conference on Cold Fusion</i> , May 2000. <i>Proc. ICCF8</i> (in press). Bryan Clarke, et al., <i>Fusion Technology</i> (in press).	2
M. C. H. McKubre, S. Crouch-Baker, A. M. Riley, S. I. Smedley, and F. L. Tanzella, "Excess Power Observations in Electrochemical Studies of the D/Pd System, the Influence of Loading" in <i>Frontiers of Cold Fusion</i> , <i>Proc. of Third International Conference on Cold Fusion</i> , Ed. by H. Ikegami (Universal Academy Press, Inc., Tokyo, 1993), p. 5.	3

**(4) STATEMENT OF AMICUS CURIAE  
(Fed Circuit Rule 47.5)**

As a friend of the Petitioner and the court, the following background information is presented.

Dr. Talbot Chubb holds a Doctorate of Science degree (Ph.D., Physics, Univ. of North Carolina in Chapel Hill) and AB (Physics, High Honors, Princeton Univ.). He is a Fellow of American Physical Society and American Geophysical Union.

He has served for 31 years at the Naval Research Laboratory, and thereafter University Space Research Associates, Bendix Field Engineering Corporation, and Oakton International Corp. Dr. Chubb's specialties are x-ray and uv sensors, solar, uv and x-ray astronomy from space, astrophysics, and energy studies. He is the recipient of the NAVY Dist. Civil Service Award, RESA Pure Science Award, E. O. Hulbert Science Award, and Elisha Mitchell Society Award.

**(5) ARGUMENT - ISSUES ADDRESSED**

**5. Whether the Office complied with the standards of review regarding operability under 35 U.S.C. §112.**

This discussion concerns the utility of devices and methods for measuring "loading", such as the Petitioner's invention. Loading is a term used by practitioners of the art. Deuterium loading describes an increasing of the deuterium atom/metal atom ratio in a metal cathode. This increasing can occur during electrolysis of heavy water (McKubre et al. 1993).

With sufficient loading and other factors, there is strong experimental evidence that a radiationless form of nuclear fusion sometimes occurs in deuterium-loaded palladium metal. Substantial laboratory progress in establishing the reality of these radiationless d-d nuclear reactions in the deuterium-palladium system have been well summarized in "Excess Heat & Why Cold Fusion Research Has Prevailed", Charles Beaudette, Oak Press, LLC, South Bristol, Maine,

USA, 2000). The data includes mass spectrometer observations of helium-4 in the electrolysis off-gas in experiments by Miles, B. Bush, McKubre, and Tanzella [ M. H. Miles and B. F. Bush, "Heat and Helium Measurements in Deuterated Palladium", Trans. Fusion Technol. , 26, p. 156 (1994), M. C. H. Mckubre, F. Tanzella, and P. Tripodi, Presentation made at the Western Regional Meeting of the Amercian Chemical Society, October 1999. Proc. ICCF8 (in press). Submitted to Fusion Technology].

Japanese researchers have developed a DS-cathode, which has produced watts of excess heat 10 times in a row [Y. Arata and Y.-C. Zhang, "Achievement of Solid-State Plasma Fusion ('Cold-Fusion')", Proc. Japan Acad. , 71B, p. 304 (1995), Y. Arata and Y.-C. Zhang, "A New Energy caused by 'Spillover-Deuterium'", Proc. Japan Acad. 70B, p. 106 (1994); Y. Arata and Y.-C. Zhang, "Solid State Plasma Fusion ('Cold Fusion')", J. High Temperature Soc. Jpn. 23 (Special Vol.), p. 1 (1998)].

There has followed successful transfer of the Arata and Zhang DS-cathode technology developed at Osaka University to the McKubre laboratory at SRI. (1999), and confirmation of the observation of by-product helium-3 by Arata and Zhang [Y. Arata and Y.-C. Zhang, "Helium (4He, 3He) within Deuterated Pd-Black", Proc. Japan Acad. 73B, p. 1 (1997)] by Clarke and McKubre et al. during study of materials from previously run DS-cathodes. Helium-3 was repeatedly observed at a helium-3/helium-4 ratio greater than 10000 times ambient value, and tritium in gas from a post-run DS-cathode was measured by the build-up of helium-3 in stored chemically-purified hydrogen samples by Clarke, Oliver, and McKubre et al. [M. C. H. Mckubre, F. Tanzella, and P. Tripodi, Presentation made at the 8th International Conference on Cold Fusion, May 2000. Proc. ICCF8 (in press). Bryan Clarke, et al., Fusion Technology (in press)].

The fusion process is described by the reaction:  
2 deuterons  $\Rightarrow$  helium-4  
with release of 23.8 MeV of reaction energy.

The released nuclear energy appears as heat without neutron, gamma ray or energetic particle emission. The heat production and the synthesis of helium-4 product have been quantitatively measured and shown to agree with the known heat of formation. There is also strong evidence for a side reaction that produces helium-3 and hydrogen-3 at rates that don't contribute significantly to heat production, but which clearly show that a nuclear process has occurred.

**5. Whether the Office complied with the standards of review regarding utility under 35 U.S.C. §101.**

McKubre et al. found that excess heat release in heavy water electrolysis using Pd cathodes depends on the achieved D/Pd ratio, as well as on other factors [M. C. H. McKubre, S. Crouch-Baker, A. M. Riley, S. I. Smedley, and F. L. Tanzella, "Excess Power Observations in Electrochemical Studies of the D/Pd System, the Influence of Loading" in *Frontiers of Cold Fusion*, Proc. of Third International Conference on Cold Fusion, Ed. by H. Ikegami (Universal Academy Press, Inc., Tokyo, 1993), p. 5]. These researchers have used an awkward electrical resistivity method to measure deuterium loading. Their method requires that additional wire contacts be made onto the cathode being tested. These additional contacts can compromise the ability of the metal cathode to achieve high loading.

The measurement of deuterium/metal ratio is of utility in this research and development effort. Methods that avoid use of extra contacts could be of special utility.

Respectfully submitted,



Talbot A. Chubb, Ph.D.

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**(6) STATEMENT OF CONSENT**

The writer of this Brief certifies that he has gained consent of the Petitioner to participate as an *amicus curiae*. Consent from the Office of the Solicitor General (202-514-2217) has been requested/obtained: TA

Talbot A. Chubb



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